Understanding the Federal Communication Commission's Policy-Making Using Big Data

Michael Bommarito & Adam Candeub, *Agency Transparency, the FCC, and ECFS*

Introduction

What drives administrative action is, of course, a central concern to students of the regulatory process. Answers to this question turn on agency disclosure because without disclosure the drivers of administrative action remain known only to the decision-makers themselves.   In theory, the more disclosure an agency provides, the more it should make its workings understandable to the public and susceptible to empirical investigation—and perhaps even prediction.[1]

Agencies typically provide disclosure by allowing the public to inspect documents and records. These might include the documents that the bureaucracy creates, submissions from members of the public and regulated parties, lists of matters under current consideration, and records of meetings and outside contacts.

Yet, more information does not automatically mean more transparency; more information is a necessary but not sufficient condition for transparency.   Simply providing enormous amounts of information, made difficult to access due to poor indexing and classification, can obscure as much as failure to release information. After all, the entire workings of the United States government is laid bare to those who read the Federal Register everyday cover to cover and retain all its contents—but who can do that?

Thus, transparency in an agency depends on how easily its released information can be sorted and analyzed --- and, in an age of computer analysis of online information, transparency means the ease by which computers can extract and analyze relevant information, i.e., information that truly casts light into agency workings.

In this regard, an agency's organization and classification of documents drives the level of transparency it achieves. The Federal Communications (FCC) has over the years taken efforts to make itself transparent. Scandals about secrecy in agency decision-making as well as initiatives by particular chairman to burnish the agency's reputation have prompted these efforts. For instance, the famous HBO v. FCC case, concerning improper contacts between industry and the Commission during informal rulemaking processes, led the FCC to adopt an ex parte system that required all meetings to be noticed, [2] and

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[1] See Ann Florini, Introduction: The Battle over Transparency, in The Right to Know: Transparency for an Open World 1, 5 (2007) (defining transparency as "the degree to which information is available to William outsiders that enables them to have informed voice in decisions and/or to assess the decisions made by insiders");,Frederick Schauer, Transparency in Three Dimensions, 2011 U. Ill. L. Rev. 1339, 1343 ("Transparency is about availability and accessibility, but these attributes of transparency are agnostic on the question of who might take advantage of that availability or accessibility and at what cost.").

[2] Home Box Office, Inc. v. FCC, 567 F.2d 9, 57(D.C. Cir. 1977) ("Once a notice of proposed rulemaking has been issued . . . any agency official or employee who is or may reasonably be expected to be involved in the decisional process of the rulemaking proceeding, should [refuse to engage in ex parte communications].... If ex parte contacts nonetheless occur, we think that any written document or a

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their contents described (to some degree).[3] Years later, Chairman Powell, eager to capitalize on an image of tech-savvy progressive bureaucrat, created an excellent website that allowed broad access to the agency documents.[4] Similarly, concerns about transparency prompted reform of the ex parte process under Chairman Genokowski.[5]

The FCC's electronic comment filing system (ECFS) reveals much about agency workings. ECFS is designed to give both the public and those practicing before the FCC access to Commission rulemakings and docketed proceedings via the internet.[6] Lawyers and individuals can file submissions electronically in ECFS, which accepts comments in FCC rulemakings and other docketed proceedings. ECFS includes filings from 1992 onward.[7] ECFS contains notices of ex parte meetings, letter submissions, comments, and virtually every other publically available filing in rulemaking procedures.

This Article, therefore, looks to the ECFS as the key to making transparent the factors that drive FCC rulemaking action. Using a dataset that contains all ECFS data from 1992 to 2008 -- merged with a dataset of all Commission votes for the same period -- the Article does a preliminary study to look at the factors that drive agency action.

Using ECFS presents serious methodological challenges as it is a huge database with well over 15 million data points. What follows is a preliminary study that attempts to capture the forces that lead the FCC to vote. In other words, what factors correlate with getting the FCC, as a commission, to do something. We attempt to discover how the quantity of public comments, as well as the participation of particular law firms, drive—or sometimes retard—agency action.

I.   Prior Literature

There is an important (and growing) body of empirical research on the effect of lobbying on agency action—most of it shows an effect on policy. Part of the challenge of this research has been the difficulty of collecting and analyzing huge volumes of data showing agency contacts and submissions. As the computer capacity to analyze large volumes of information and text grows, so will the literature.

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summary of any oral communication must be placed in the public file established for each rulemaking docket immediately after the communication is received so that interested parties may comment thereon.").
[3] 47 C. F. R. §§ 1.1200 – 1.121.
[4] Peter M. Shane, Empowering the Collaborative Citizen in the Administrative State: A Case Study of the Federal Communications Commission, 65 U. Miami L. Rev. 483, 486 (2011) ("FCC website, which had marked a significant advance in e-government when developed under former Chairman Michael Powell, was suffering from years of neglect.").
[5] Report to the Chairman, FCC Should Take Steps to Ensure Equal Access to Rulemaking Information Subcommittee on Telecommunications and the Internet, Committee on Energy and Commerce, House of Representatives (Sept. 2007); see also William F. West, Inside the Black Box: The Development of Proposed Rules and the Limits of Procedural Controls, 41 Admin. & Soc'y 576, 590 (2009).
[6] See Electronic Comment Filing System, Fed. Commc'ns Comm'n, http:// apps.fcc.gov/ecfs/ (last visited Nov. 17, 2013).
[7] https://www.fcc.gov/online-filing.

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For example, Haeder and Yackee, using textual content analysis, examine the degree of change in regulations after review by the Office of Management and Budget. They find that lobbying is associated with change in the content of regulation.[8] Similarly, McKay and Webb demonstrate that agencies change the content of final rules in favor of the side that dominates the submission of comments.[9] Looking to Department of Transportation rules, Naughton et al. find that early commenters set the regulatory agenda-setting affecting the content of future regulations and stopping unwanted regulations.[10]

Our study adds to this literature in several ways. First, it is unique in its scale. Our database includes well over 15 million data points. Second, the amount and specificity of data allows us to examine more closely the precise levers of influence affecting agency action.

II.   ECFS: Rulemaking Transparency and Docket Numbering

Agencies implement their statutory mandates through either adjudication or rulemaking, as governed by the Administrative Procedure Act (APA). While adjudications once played a major role in FCC regulation, particularly in the awarding of broadcast licensing, the FCC has relied primarily on rulemaking for the vast majority of its regulations.[11]

The FCC, under the Communications Act of 1934 and the Administrative Procedure Act, may conduct informal rulemaking—as opposed to formal rulemaking. Under formal rulemaking, all evidence is introduced at a hearing at which witnesses present data and argue for particular positions. The hearing is conducted before an examiner, and which parties have the right to cross-examine each other. The presiding officer must make a decision solely on the evidence created from the record of these formal proceedings. In general, ex parte communications between parties and the decision-maker are prohibited by law in formal rulemakings.[12]

Formal rulemaking creates a straightforward approach to transparency. If the public wants to know on what sources the decision-maker has relied upon, the public need only

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[8] Influence and the Administrative Process: Lobbying the U.S. President's Office of Management and Budget, American Political Science Review, 109.3 (Aug 2015): 507-522.

[9] American Politics Research May 2007 vol. 35 no. 3 336-357 Interest Group Competition on Federal Agency Rules.

[10] Keith Naughton et al., Understanding commenter influence during agency rule development Journal of Policy Analysis and Management, 28.2 (Spring 2009): 258–277.

[11] Karen L. Nachbar, III. Cellular Telephone Service-Reaffirming the FCC's Authority to Modify Technical Requirements for Licensing, 64 Geo. Wash. L. Rev. 937, 941-42 (1996) ("Agency action is divided into the two broad categories of adjudication and rulemaking, each with its own procedural standards. Agencies also enjoy wide latitude when using rulemaking to change their own policies and the manner in which the policies are implemented. ··· The D.C. Circuit has noted that this is "particularly true of the FCC,"" *citing* Rainbow Broadcasting Co. v. FCC, 949 F.2d 405, 409 (D.C. Cir. 1991)).

[12] Note, Due Process and Ex Parte Contacts in Informal Rulemaking, 89 Yale L.J. 194, 197 (1979) ("In 1976, Congress amended the APA to prohibit ex parte communications in formal rulemaking proceedings and in agency adjudications").

look at the formal submissions and the record they generate. While these dockets may be extensive, they can be found in one place—and the record is comprehensive. The decision-maker is prohibited from relying on any other source.

In contrast, informal rulemaking creates significantly more challenges for transparency. The Administrative Procedure Act and the FCC allow for a wide variety of processes that create sprawling and potentially incomplete records. The FCC can initiates rulemaking in response to a statute, a petition for rulemaking, or its own initiative. In addition, any person may petition FCC to amend rules or create new rules. Although sometimes the FCC issues a Notice of Inquiry (NOI) to investigate a matter for potential rulemaking, FCC typically commences a rulemaking by releasing a Notice of Proposed Rulemaking (NPRM). After comment period and opportunity for comment, many proceedings produce a final rule, which has the force of law. [13]

During the comment period and, indeed, at any time, the FCC can receive information from myriad sources. Members of the public, as well as representatives of industry, may submit to the rulemaking record by filing comments on FCC's notices, filing reply comments to other parties' comments, simply writing letters, or meeting with FCC officials.

The "FCC relies extensively upon the ex parte practice. FCC norms even permit use of ex parte contacts after the comment period concludes and FCC administrators signal the issues they deem to be the most relevant."[14] Meetings must be noted in the record with a letter that is required to describe, in the vaguest of terms, the matters to be discussed.[15] While reforms instituted by Chairman Genokowski were intended to remedy the sometimes less than illuminating ex parte system, many continue to believe the ex parte process is not sufficiently transparent.[16]

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[13] J. Brad Bernthal, Procedural Architecture Matters: Innovation Policy at the Federal Communications Commission, 1 Tex. A&M L. Rev. 615, 636 (2014) ("The APA sets forth fundamental due process safeguards that require meaningful participation opportunities in advance of final administrative decisions such as rules and orders . . . . During ordinary "notice and comment" rulemaking, for example, an agency must provide notice of "either the terms or substance of the proposed rule or a description of the subjects and issues involved." Any "interested persons" must have an opportunity to participate,'" *citing* 5 U.S.C section 553.).

[14] J. Brad Bernthal, Procedural Architecture Matters: Innovation Policy at the Federal Communications Commission, 1 Tex. A&M L. Rev. 615, 639 (2014).

[15] https://www.fcc.gov/guides/how-file-notice-ex-parte-presentation ("Copies of written presentations or summaries of oral presentations must generally be filed no later than two business days after the presentation, with copies of summaries to the Commissioners or Commission employees to whom the presentations were made. The summaries of oral presentations must list all persons present and describe the substance of the new data or arguments presented (or provide a citation to prior written filings containing the data or arguments) and not merely list the subjects discussed. Generally, more than a one or two sentence description is required."); see 47 C.F.R. § 1.1206(b). Of course, non-compliance with the requirement that ex partes provide substantive descriptions is somewhat rampant.

[16] J. Brad Bernthal, Procedural Architecture Matters: Innovation Policy at the Federal Communications Commission, 1 Tex. A&M L. Rev. 615, 639-40 (2014) ("Even after ex parte reforms implemented under Chairman Genachowski, the FCC's permissive approach to ex parte meetings remains in place and, arguably, out of step with some other federal agencies.").

Informal rulemakings are organized by docket. Dockets are identified by a number that includes the originating bureau, the year and then a sequential number, i.e., CB 01-212, is the 212st rulemaking commenced in the year 2001 and the Cable Bureau is running the docket.

It is vital to remember that docket numbers are organized by topic in a general sense. While most dockets begin with an NPRM, subsequent orders and reconsiderations and NPRMs growing out of the original NPRM topic remain in the same docket and retain the same number. Thus, the local competition docket, CC 96-98, contains hundreds of orders and NPRMs and hundreds of thousands of comments, letters, and other submissions. Dockets may contain, therefore, a multitude of NPRMs and proceedings. We have over 12,000 dockets in our proceeding, covering the period of 1993 to 2008, with the vast majority contained very few submission items.

The docketing system and sprawling nature of informal rulemaking proceedings make these them less transparent than formal rulemaking in that it is much harder to determine the record upon which the final rule is made—at least under the indexing system that the FCC uses. Because there are multiple orders within a docket, it is not clear to which final rule a comment or letter relates—particularly with the extremely large dockets.

III.   Our Dataset

We obtained a copy of the entire Electronic Comment Filing System from 1992 to 2008 and merged it with a unique dataset of all FCC orders, i.e., all orders voted upon by the commissioners. The dataset is large, consisting of many millions of data points. The simple descriptive statistics are below.

Chart 1
ECFS (1992-2008)

ECFS Feature	Number
Dockets	12492
Comments	150824
Comment Replies	196086
Ex Parte Meetings	9339
Letters	9790
Conferences	4038

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The following are the top 30 law firms in terms of submission to the FCC during the sample period.

Chart 2
ECFS (1992-2008)
Top Law Firm Submitters

Law Firm	Total Number of Submissions
lukas_nace	982
bingham_mccutchen	736
kelley_drye	454
dickstein_shapiro	431
blooston_mordkofsky	430
john_staurulakis	410
bennet_bennet	408
hogan_hartson	403
swidler_berlin	393
willkie_farr	341
greenberg_traurig	310
latham_watkins	269
kurtis_associates	262
crocker_crocker	261
harris_wiltshire	256
davis_wright	251
blooston_lawfirm	241
kraskin_lesse	240
lawler_metzger	233
wiley_rein	233
kellogg_huber	228
nowalsky_bronston	213
wilkinson_barker	212
helein_marashlian	210
dow_lohnes	209
woods_aitken	190
mcdermott_will	176
gvnw_consulting	172
bechtel_cole	167

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IV.   Methodology

As an initial, exploratory take on this data, we only examine the metadata in ECFS as opposed to content analysis of the actual texts of submitted documents.   In particular, for each type of submission: comment, reply, letter, ex parte, conference, etc.. we obtained the following metadata: the law firm representing the party submitting the document, docket number, the bureau to which the document was submitted, and the date. We then combined this data with a unique database containing every Commission vote on an order.

Our approach employs machine learning to create a classification tree. Our model predicts the value of a target (FCC commissioner affirm votes) based on the input variables in the metadata.   The model generates a tree with nodes as conditions that the machine learning program suggests from analyzing the structure of the data.[17]   To the right of each node, the condition is true—to the left false. Finally, at the bottom of the tree, there is the target values, i.e., the likelihood of FCC action or inaction. Action taken is the right number; non-action is the left number.

Therefore, at the top of the tree one finds variables that seem to have the greatest predictive relevance over the entire sample. As one move down the tree, the variables predict smaller and smaller slices of the sample.

V.   Results

Unlike a typical social science paper that offers regressions in order to ferret out causal relations, our classification tree is far more descriptive. We identify conditions that make certain outcomes (FCC action or inaction) more or less likely.   Our trees both confirm suspicions about the way the FCC works and offer a few surprises. In particular, the presence of certain law firms and, indeed, participation by parties in certain zip codes, i.e., K Street or Northern Virginia affects the target variable. In addition, there seem to be certain law firms that are associated with FCC action (or inaction).

*Complete Classification Tree Results*

We first construct a tree employing all of the metadata. We find some compelling correlations. First, the sheer amount of submissions in a docket correlates strongly with commissioner voting, with comments and letters associated with a higher likelihood that the Commission will act. This is not surprising.   Busy dockets should be correlated with agency action. As the first node indicates, small dockets—with few entries—are quite different. Indeed, they probably have higher rates of FCC inaction as many dockets are created but nothing ever happens to them.

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[17] L. Breiman, J. Friedman, R. Olshen, and C. Stone, "Classification and Regression Trees", Wadsworth, Belmont, CA, 1984; T. Hastie, R. Tibshirani and J. Friedman. "Elements of Statistical Learning", Springer, 2009.

Nonetheless, even in very small dockets, with only a few submissions (fewer than 2.5), interesting patterns emerge. As this node indicates, FCC action (indicated by the right number in the brackets) is radically different depending upon the zip codes of the submitters. If at least one of those submissions emanates from a party with a 20501 zip code (K Street), then the odds of action are 20/80. If there is a submission with a 20036 in addition, then the odds of FCC action become 20/46. If neither zip code is involved, the odds the FCC will act is 1/34.
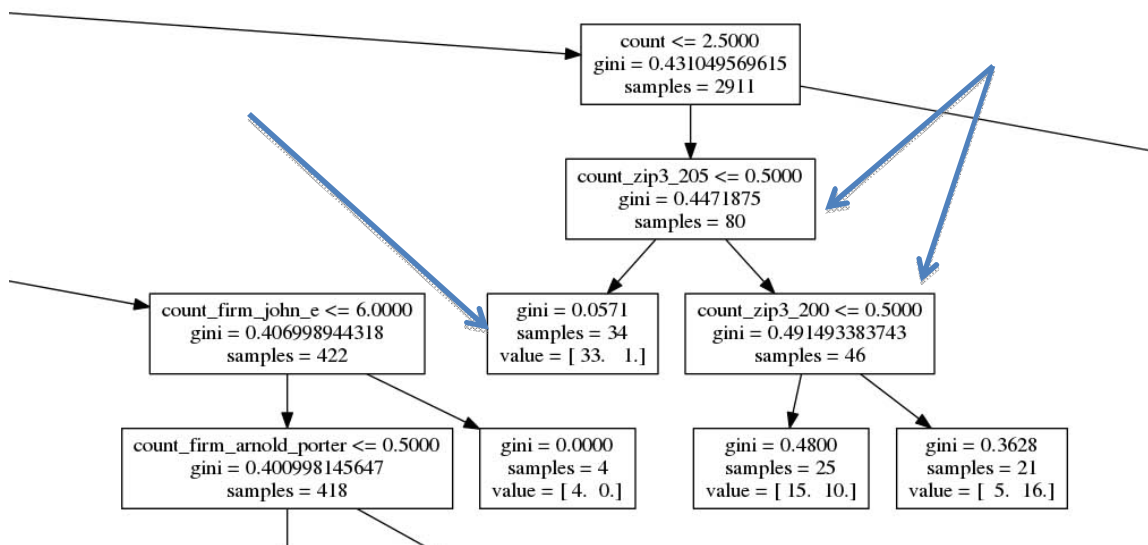
Similar interesting effects can observed with law firms. For instance, notice the effect of Dow Lownes and Swidler Berlin and Wilkinson Barker. Their presence is associated with a much higher rate (or lower rate) of FCC action. While dockets in these branches have rather low rates of agency action (e.g., 176/398), the presence of Swidler Berlin leads to higher outcomes (1/14)—and Dow Lownes and Wilkinson Barker much lower. Lawyers are hired often to slow FCC action as well as precipitate it.
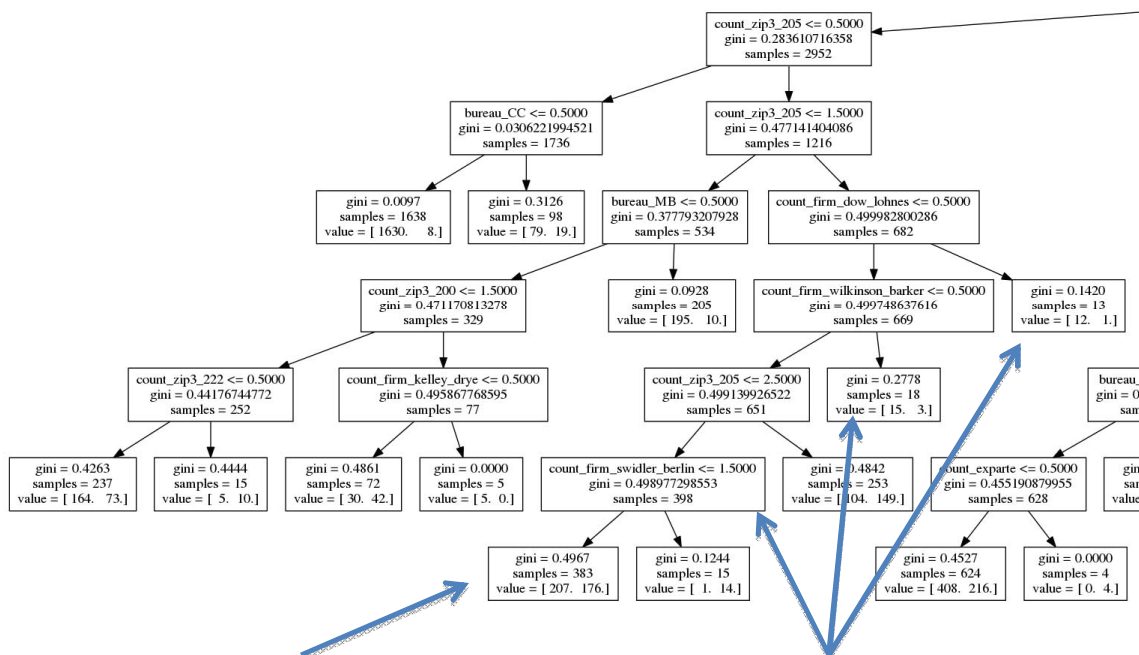
Effect of Law Firm Filter

Building upon the effect of law firms, we apply the same classification techniques to our data but filter for law firm. Examining the tree filtered by law firm one finds a differential effect of law firms on Commission action. A consistent finding is that certain law firms correlate more strongly with Commission passing—and sometime delaying--of orders.
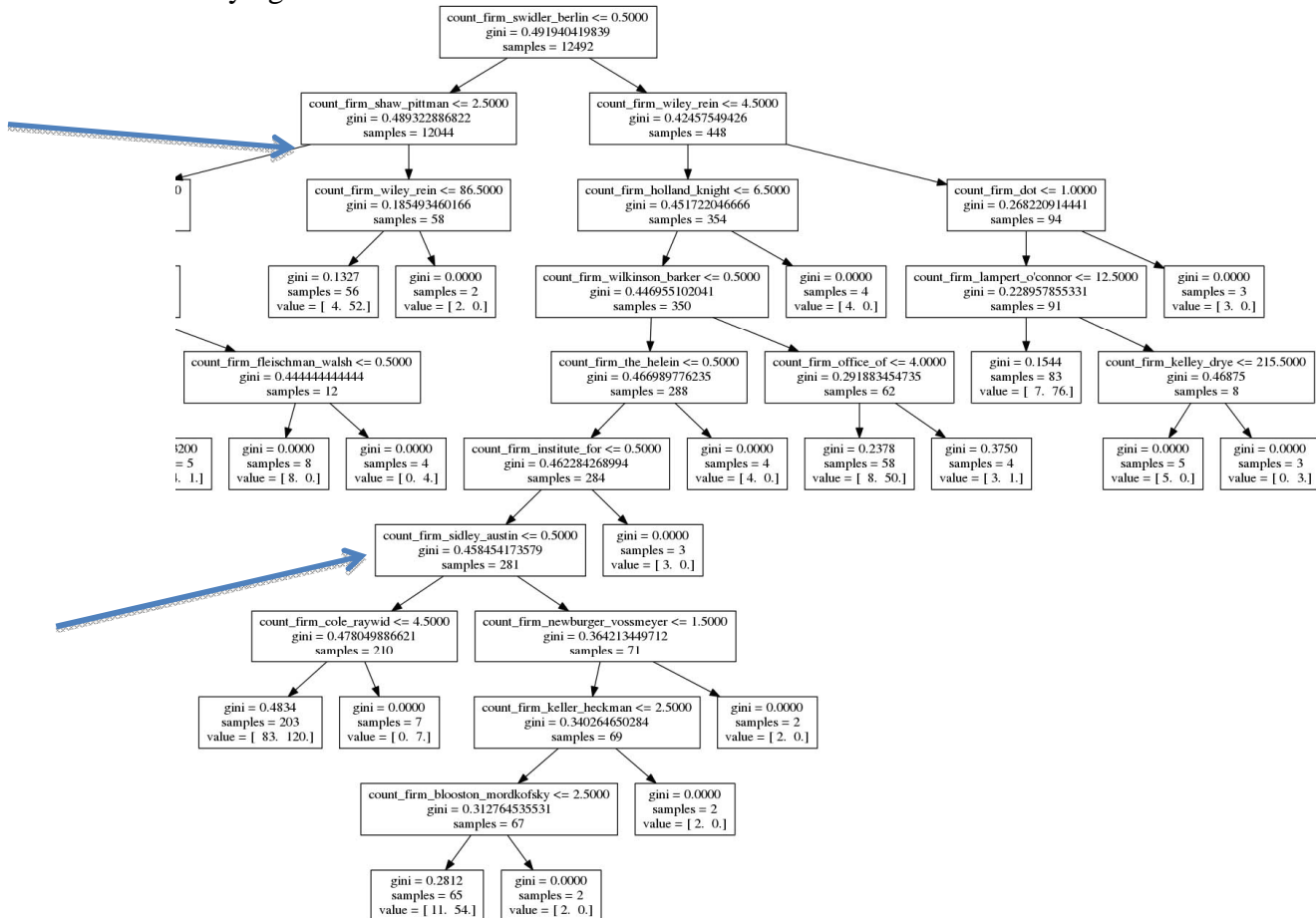
Here, firms that have the biggest effect upon likelihood of agency action tend to cluster at the top of the tree. Firms such as Swidler Berlin, Wiley Rein, Sidley Austin are represented. In the small right hand part of the tree, there are some unusual interactions. Combinations of firms often produce dramatic rates of FCC action or inaction.

VI.   Conclusion

This is an exploratory study; nonetheless, it raises important points about the disclosure of the drivers of agency action as well as agency action itself. First, "transparency" in

informal rulemaking is hard. Associating comments, letters, ex partes and other submissions to particular orders or rulemakings presents serious research challenges.

But, these difficulties are not inherent; rather, the FCC creates this difficulty with its docket numbering system that lumps together numerous rulemakings and FCC actions under the same docket number. If the FCC adopted a docket system that required every ex parte, comment, and submission of any type to be linked explicitly to a particular NPRM, it would create a more transparent agency. Party submissions and ex parte meeting could be therefore more directly linked to agency action.

Nonetheless, the data as it is tells some interesting and suggestive stories. First, docket activity correlates to agency action—and correlates with docket submissions from zip codes from the DC and Northern Virginia areas. This is a story that is not surprising. Second, certain law firms are certainly more associated with FCC voting on orders than other firms—and this suggests a way perhaps to eventually evaluate law firm effectiveness in manipulating the FCC.

Indeed, these correlation studies are largely suggestive of topics for further study. They are not methodologically pure social science; there are no p-values and they are open to claims of data mining. On the hand, given the comprehensiveness of the data, correlation tells us about how the FCC, in fact, works and perhaps reflects a first step in the development of more complex prediction models.